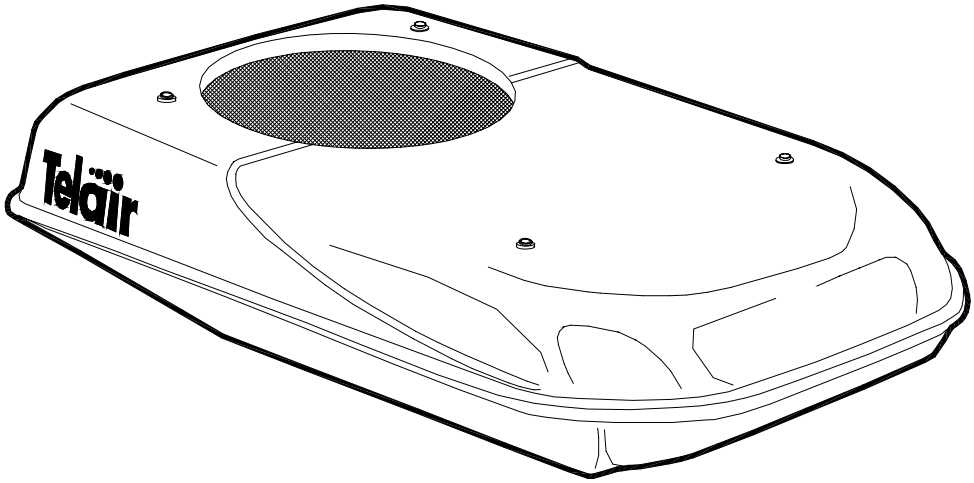
Telair

AIR CONDITIONER

CE

ICEBERG 7.000 12.000



GB

INSTALLATION AND USER MANUAL

VERS. 003 - JULY 2005

Telair
Via E. Majorana , 49 48022 Lugo (RA) ITALY

"CE" COMPLIANCE STATEMENT

Under Machine Directive 89/392/EEC, attachment II A

We hereby represent that the air conditioner, the data concerning which appear below, has been designed and built to correspond to the essential safety and health requirements laid down by the European Directive on Machine Safety.

This statement shall not be valid any longer if any changes are made on the machine without our written approval.

Machine: AIR CONDITIONER

Model: ICEBERG ……

Serial number: ……...

Directive of reference:

Machine Directive (89/392/EEC) in version 91/31/EEC

Low Voltage Directive (73/23/EEC)

Electro-magnetic Compatibility (89/336/EEC) in version 93/31/EEC

Harmonised standards applied, especially: EN 292-1; EN 292-2; EN 60204-1

DATE …03/01/2000…….

THE PRESIDENT

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1 FOREWORD

MANUAL Refer carefully to this manual before performing any operation on the air conditioner.

1.1 Purpose and scope of this manual

This manual has been drawn up by the Manufacturer in order to provide basic information and instructions for performing every operation for servicing and using the air conditioner in a proper and safe manner.
It is an integral part of the conditioner equipment should be kept clean and safe throughout its working life.
It must follow the conditioner if the latter is installed on a new vehicle, or if its ownership changes hands.
The information in this manual is addressed to the personnel which must install the air conditioner, and to all those involved in its maintenance and use.
This manual sets out the purpose the machine was designed for, and contains all the information required to guarantee that it is used in a safe and proper fashion.
Constant attention to the instructions laid down here will guarantee the safety of the user, economy and longer life of the machine.
To facilitate reference, this manual has been subdivided into chapters which specify the main notions; for quick consultation, refer to the table of contents.
The most important parts of the text are in bold letters and preceded by symbols described below.
Please read the contents of this manual carefully.
This is the only way to ensure that the air conditioner will work properly through time and be reliable, while safeguarding people and things.

Note: *The information contained in this publication was correct at the time it went to print, but may be modified without advance notice.*

1.2 Symbols and Definitions

DANGER This means that you must pay attention to avoid serious consequences which might lead to the death of the operators or at least to possible damage to their health.

WARNING This means a situation which could take place during the lifetime of a product, system or installation, and which is considered to be hazardous in terms of damage to people, property, the environment or financial loss.

CAUTION This means you must pay attention in order not to incur serious consequences which might lead to damage to material goods, such as resources or the product itself.

INFORMATION Especially important instructions.

The drawings are only provided by way of example.
Even though the machine you actually have may differ from the illustrations contained in this manual, safety and information about the same are guaranteed.

The manufacturer, as part of his policy of constant development and updating, may effect changes without providing advance notice.

1.3 General Information

The ***ICEBERG 12000*** and ***ICEBERG 7000*** air conditioners have been designed for installation on the roofs of vehicles. They run on 230 VAC 50 Hz alternate current power supply.

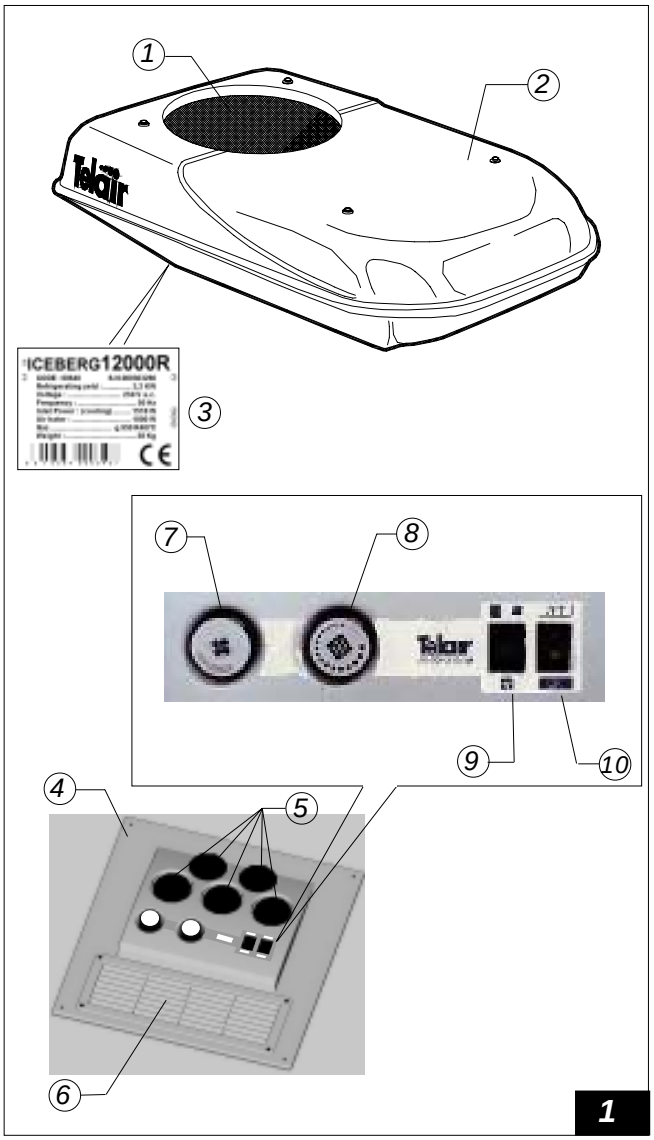
WARNING ***The power supply must never fall below 210 VAC, and the frequency must stay steadily at 50 Hz.***

The use of air conditioners at a different voltage from the above would compromise their good performance and could also be dangerous for the integrity of the equipment.

2. AIR CONDITIONER IDENTIFICATION DATA

2.1 Components (fig. 1)

1 Ventilation grid
2 Top hood
3 Identification label
4 Diffuser
5 Adjustable air outlets
6 Ambient air suction grid
7 Fan speed selector switch
8 Hot-cold air selector switch
9 Thermostat control
10 ON/OFF switch



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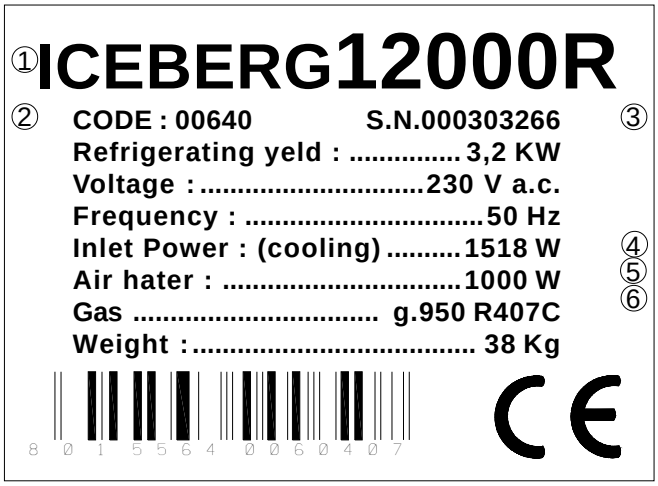
2.2 Identification label

1 Model
2 Machine code
3 Serial number
4 Compressor and fans consumption
5 Heater power
6 Coolant gas type and quantity


1 ICEBERG 12000R
2 CODE : 00640 S.N.000303266 3
Refrigerating yeld : ..... 3,2 KW
Voltage : ..... 230 V a.c.
Frequency : ..... 50 Hz
Inlet Power : (cooling) ..... 1518 W 4
Air hater : ..... 1000 W 5
Gas g.950 R407C 6
Weight : ..... 38 Kg
8 0 1 5 5 6 4 0 0 6 0 4 0 7
CE

2.3 Technical features

	ICEBERG	
	12.000	7.000
Cooling power	10950 BTU	6700 BTU
Fan speed number	3	
Power supply	230 V 50 Hz	
Consumption	6.6 A	4.2 A
Start up current	32 A (0,15 sec.)	23 (0,15 sec.)
Absorbed power	1518 W	970 W
Coolant gas	R 407 C	
Generator requested	2200 W	
Air circulation	320 m^3/h	240 m^3/h
Heating power	1000 W	
Diffuser height	5.5 cm	
Dimensions (HxLxW)	18x101x62 cm	
Weight	39 Kg	37 Kg

3 SHIPPING, HANDLING, STORAGE

3.1 Storage

The air conditioner is protected during shipping by suitable packaging. The air conditioner must be stored horizontally, in a covered, dry and ventilated area.
The packaging is designed so as to allow stacking of a maximum of 5 (five) air conditioners.

CAUTION ***Do not turn the unit upside down. The right position is the one shown by the symbol printed on the package ( ) .***

DANGER ***Stacking more than 5 air conditioners will not only compromise the integrity of the equipment, but will also be a risk to personel.***

3.2 Weight

Weight without packing.

ICEBERG 7000	Kg 37
ICEBERG 12000	Kg 39

3.3 Handling

The air conditioners, complete with their packaging, can be moved using common lifting and transport vehicles.
The boxes are provided with spacers in order to allow for the introduction of transpallet forks.

DANGER ***During lifting and transport, comply with accident prevention and safety regulations. Use lifting and transport equipment with a capacity greater than the load to be lifted.***

4 INSTALLATION

4.1 Preliminary information

INFORMATION ***Before installing the air conditioner, it is essential to read these instructions, in order to avoid errors during installation***

WARNING ***Improper installation of the air conditioners can cause irreparable damage to the equipment and compromise the safety of the installation engineer.***

Should the air conditioners be installed in a manner which does not comply with the instructions in this manual, the Manufacturer shall be held blames for malfunctions or for the safety of the air conditioner, under D.M. 89/392/EEC. Furthermore, he shall be held blameless for any damage or injury to persons
or things.

DANGER ***Installation must be performed by qualified and properly trained personnel only.***

4.2 Installation

WARNING ***Before starting to install, you must disconnect all the power supply of the vehicle***

- Positive battery pole
- Generator set (if present)
- Outside power source.

DANGER ***Lack of compliance with these instructions implies a risk of electrical shock.***

DANGER ***Before going onto the roof of the vehicle, you must make sure that it has been designed to be walked on. Check with the person who equipped the vehicle. Otherwise, you will have to prepare suitable scaffolding.***

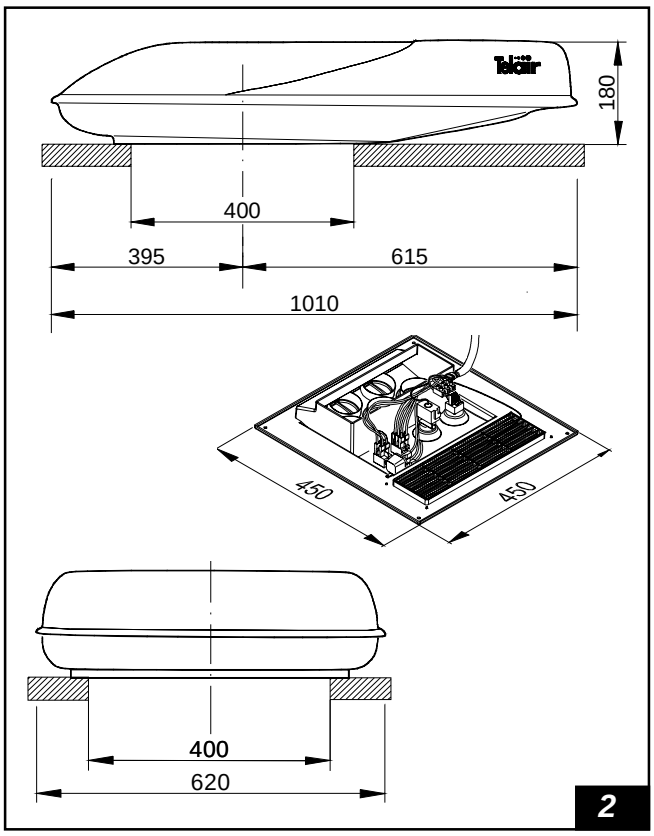
In order to install the air conditioner, you must first make sure the roof of the vehicle is able to hold its weight. If not, reinforce it. Choose a central, level and flat area on the roof. Make sure that no obstacle inside the vehicle can hinder fastening of the diffuser **[Fig.1 ref. 4]** and the exit of the cooled air from the adjustable outlets **[Fig. 1 ref. 5]**.

To install the air conditioners, you can choose either of two solutions:

- Remuve existing rooflight and use aperture
- Cut new aperture.

4.2.1 Using rooflight aperture

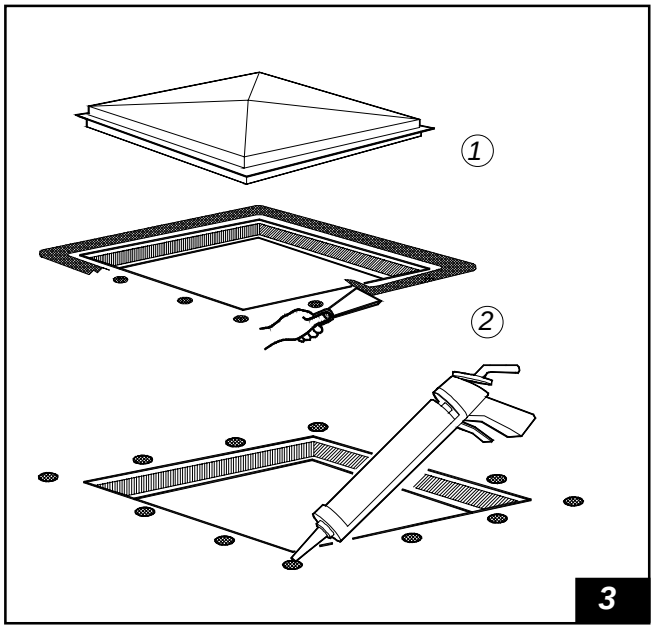
You can do so on condition that the aperture of the rooflight measure of 400 x 400 mm. For the dimensions of the air conditioners and of the holes required to install them, refer to figure 2.



2

Remove existing rooflight and sealants making sure roof surface is clean and even **[Fig. 3 ref. 1]** Seal any screw holes and or cable entrance holes so that no water can penetrate the roof space, using a suitable sealent **[Fig. 3 ref. 2]**.

INFORMATION ***All the waste material - glue, silicone, lining - must not be disposed of in the open, but in special containers and delivered to a Waste Collection and Disposal Centre.***



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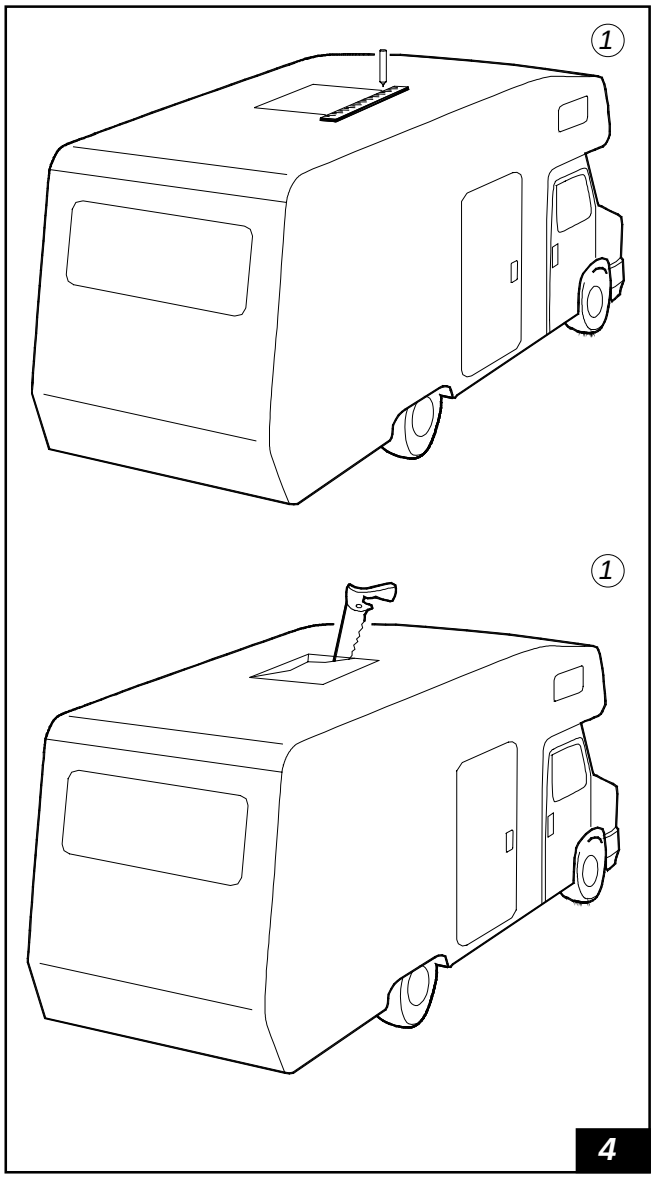
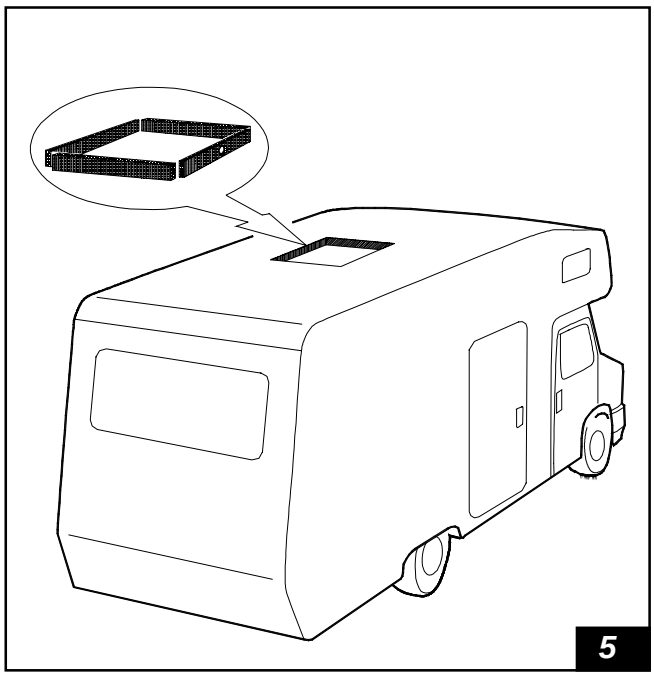
4.2.2 Opening a new hole

Choose a flat level position on the vehicle roof beteween the support structure. Mark the aperture 400 x 400 mm square **[Fig. 4 ref. 1]**.
Carefully cut out the opening on the roof, making sure that no damage will be caused e.g. cables, hoses, furniture, fittings. **[Fig. 4 ref. 2]**.

CAUTION ***Wear safety goggles and gloves before using any power tools or hand-saws.***

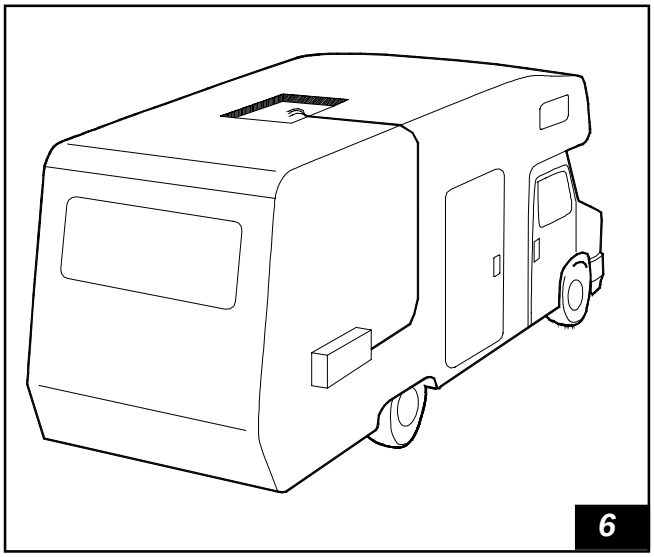
Make a reinforcing frame along the perimeter of the opening. Make a hole on one side in order to lead the power supply cable through **[Fig. 5]**.





4.2.3 Power supply cable

To set up the power supply for the air conditioner, lay a three-pole (positive-neutral-earth), power supply cable with a cross section of at least 2.5 mm^2. This cable must be connected at one end to the differential cut-off switch previously placed inside the distribution board of the vehicle, while the other end must reach the opening on the roof. Let the cable come out from the reinforcing frame by about 50 cm to allow easier connection to the air conditioner **[Fig. 6]**.



DANGER ***Before performing any kind of connection, always make sure that there is no power inside the distribution board or at the cable end.***

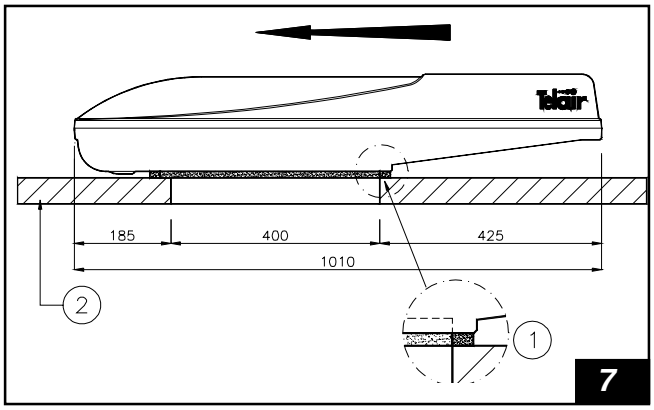
The air conditioner must be powered from a separate cable, which must be provided with a 10A fuse.

DANGER ***The cable must be sheathed so it can provide proper insulation under any condition of use of the vehicle.***

4.3 Positioning the air conditioner

Before positioning the air conditioner on the roof of the vehicle, spread a sufficient of quantity slow-drying sealant around the edges of the opening.
Take the air conditioner on to the roof of the vehicle **[Fig. 7 ref. 2]** and position it over the opening (previously treated with sealant). Remember that the side with the ventilation grid must face the rear end of the vehicle. The arrow on Figure **7** shows the driving direction of the vehicle.

INFORMATION **The support gasket must be placed flush with the edge of the hole drilled, on the back of the air-conditioning unit [fig. 7 ref. 1].**



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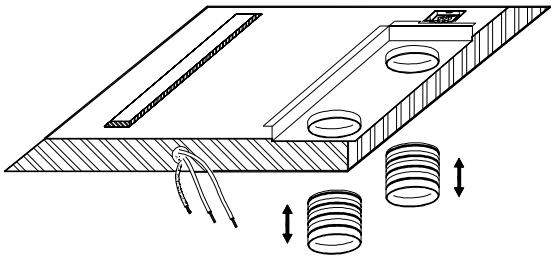
From within the vehicle, move the air-conditioning unit until the gasket is flush with the rear section of the roof opening.

INFORMATION **The air ducts may be extended, [fig. 8], they may therefore be used with roof thickness 30 to 80 mm. Should the roof be thicker, longer air ducts are available.**

Fix the anchor frame to the air conditioner **[Fig. 9 ref. 1**] , as shown on Figure 9, using the four relevant screws **[Fig. 9 ref. 2]** without tightening them all the way.

WARNING ***Do not crush the foam sealing too much - it must be at least 10 mm thick [Fig. 9 ref. 3].***
If the lining is crushed too much, this will damage the support of the air conditioner and will compromise the watertightness of the junction.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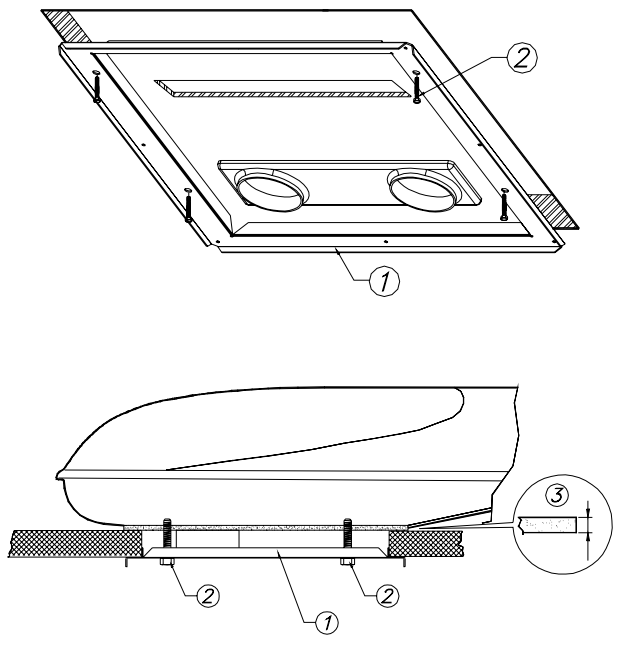

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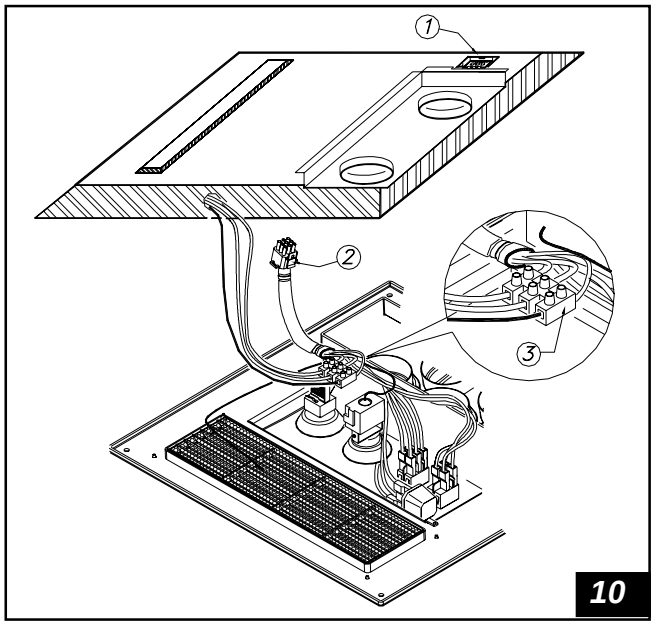
4.4 Installing the diffuser

After securing the air conditioner to the roof of the vehicle, connect the power supply cable to the connection terminal board **[Fig. 10 ref. 3]**, located on the diffuser, complying with the positions shown on the adhesive label:

blue wire: neutral
brown wire: positive
yellow-green wire: earthing (⏚)

Fit the multi-pole cable connector **[Fig. 10 ref. 2]** coming from the diffuser into the connector of the conditioner **[Fig. 10 ref. 1]**. Fit both connectors,



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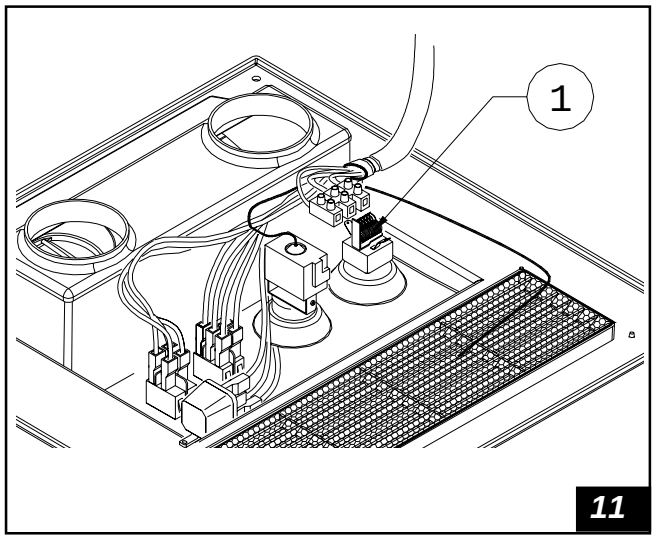
pressing until they are firmly fastened.

WARNING ***Before fastening the diffuser to the ceiling of the vehicle, make sure that no cable is in contact with the resistances of the fan speed selector switch [Fig. 11 ref. 1], because - when the air conditioner is running - these become very hot and can cause a serious hazard for the insulation of the power cables.***
Make sure that both resistances of the fan speed selector switch are not in contact with each other **[Fig, 12 ref. 1]** ***but are clearly separated*** **[Fig. 12 ref. 2].**
Make sure that the power supply cable is not too long, to avoid jamming the air intake holes **[Fig. 1 ref. 6].**



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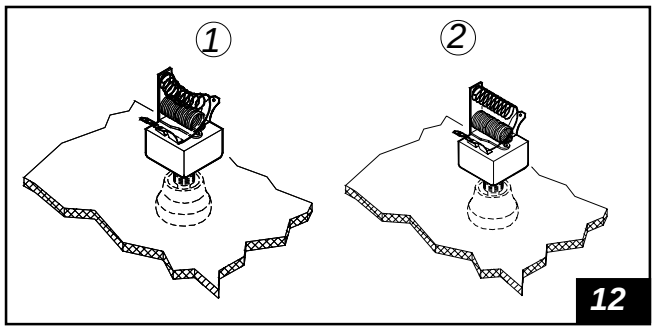

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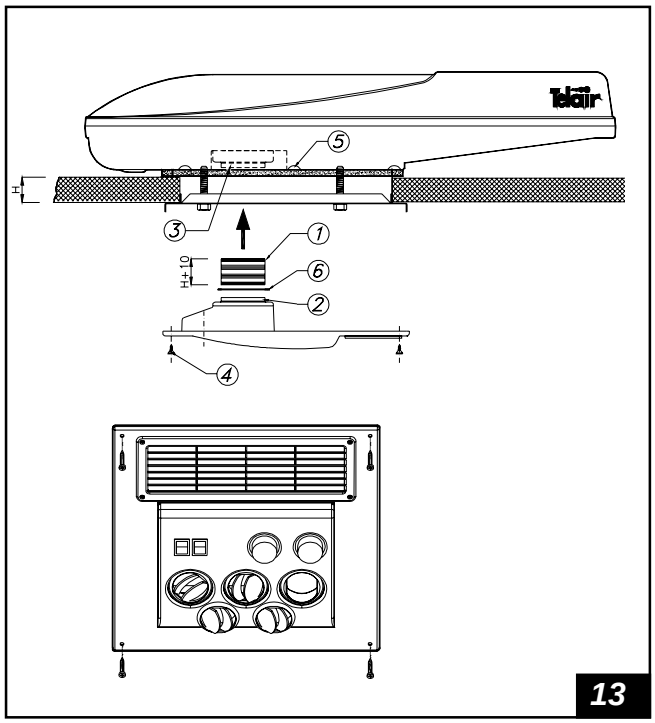
Extend the air ducts **[fig. 13 ref. 1]** by 1 cm beyond the roof thickness and fit them between the diffuser **[fig. 13 ref. 2]** and the air conditioner openings **[fig. 13 ref. 3]**, Fasten the diffuser to the frame, using the relevant four screws **[fig. 13 ref. 4]**. Fit the air ducts**[fig. 13 ref. 1]** between the diffuser **[fig. 13 ref. 2]** and the linings **[fig. 13 ref. 6]**.



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5. USER INSTRUCTIONS

5.1 Foreword

INFORMATION ***The Manufacturer shall not be held liable for any damage due to the air conditioner not working.***

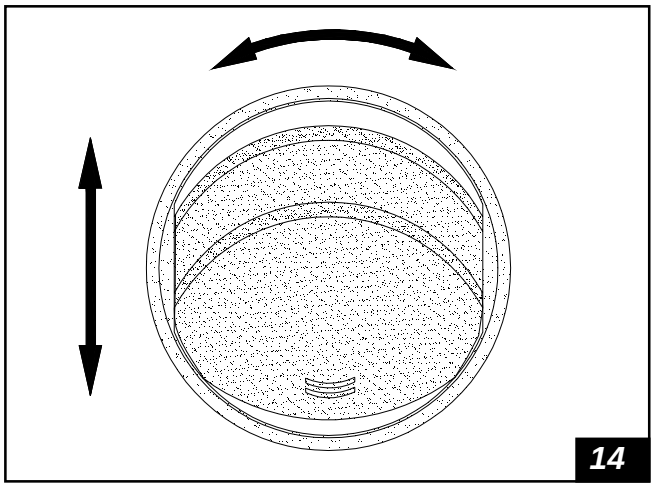
The air conditioner consists of a compressor running at 230 VAC 50 Hz. The compressor compresses the coolant gas inside a coil pipe which, when ventilated, gives off the heat developed during compression. The coolant gas is then conveyed into a condenser where it can expand and thus absorb heat from the air going through the condenser.
The cooled air is spread through the inside of the vehicle by a fan which works at an adjustable speed. A thermostat adjusts the air temperature.
ICEBERG can provide cold air in summer and hot air in winter.
When your vehicle has been exposed for a long time to sunlight, it is good practice, before starting up the air conditioner, to open the doors and windows in order to let out the heat which has built up inside.
When the indoor temperature becomes the same as the outdoor temperature, close all the doors and windows again and start up the air conditioner.
Do not open doors or windows wen the conditioner is running except in case of need.
To obtain better performance, we suggest you aim one of the outlets towards the door so that hot air does not come in when you open it.

5.2 Preliminary checks

Before turning the air conditioner on, you must perform a few simple operations.
- Make sure that the condensate drainage system is not clogged **[Fig. 13 ref. 5]**.
- Make sure that the power supply voltage and frequency are those listed in the previous paragraph.
- Make sure that nothing is preventing the air from circulating freely inside the ventilation conduits and outlets. The outside ventilation grids must always be free for the air conditioner to be truly efficient.

5.3 Air diffusion outlets

The diffuser panel **[Fig. 1 ref. 4]** houses five cooled or heated air diffusion outlets **[Fig. 1 ref. 5]**.
Each outlet is provided with two mobile baffle plates which allow you to choke and direct the air jet **[Fig. 14**]. Press on the baffle plates to choke the air jet until you close it completely off. Turn the baffle plates to point the air jet in any direction.



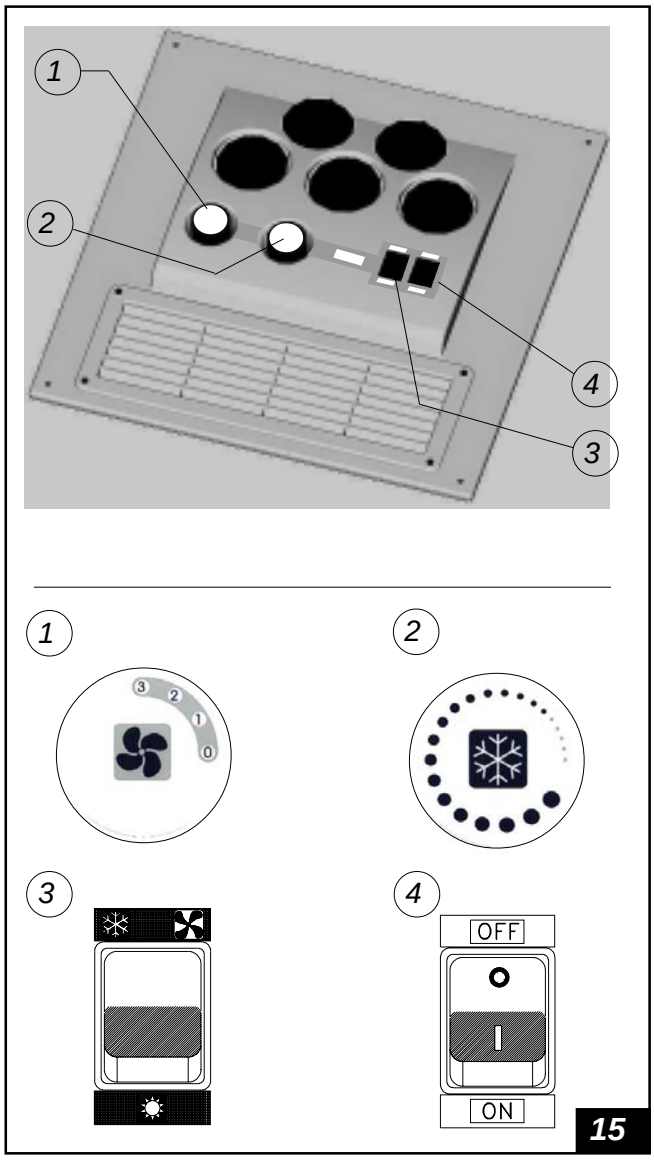
5.4 Control panel (Fig. 15)

Fan speed selector switch **[Fig. 15 ref. 1**].
Ventilation / cooling selector switch with thermostat **[Fig. 15 ref. 2].**
Cold/hot air selector switch **[Fig. 15 ref. 3]**.
ON/OFF switch **[Fig. 15 ref. 4]**.

5.5 Turning on

INFORMATION ***The air conditioner is provided with an environmental thermostat, with a minimum working temperature of 18°C (+/-1°C). Below this temperature, the thermostat does not enable operation of the compressor. This prevents the risk of ice developing inside the air conditioner. The fans and heating function are still enabled.***

To turn the air conditioner on, set the ON/OFF switch **[Fig. 15 ref. 4]** to the ON position. Position the ***cold/hot air*** selector switch **[Fig. 15 ref. 3]** on the symbols and then turn the thermostat **[Fig. 15 ref. 2]** clockwise, positioning it on the temperature value you want.
The thermostat keeps the temperature you have chosen constant, and does so automatically, turning the air conditioner compressor on and off.
The temperature scale is marked by a series of dots of different sizes.



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The minimum cooling value is marked by the smallest dot, the maximum cooling value is marked by the largest **[Fig. 15 ref. 2]**.
The thermostat controls the temperature automatically, but the speed of the fan must be set manually by the user.
Set the fan speed required on the relevant selector switch **[Fig. 15 ref. 1]**.

To use the air conditioner in the most effective manner, we suggest the following settings:

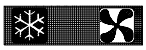
- Minimum speed - Minimum cool (night-time)
- Medium speed - Medium cool
- Maximum speed - Maximum cool

To use the conditioner more efficiently, we suggest you perform the following operations:

- First choose Maximum Cool and the third ventilation speed.
- When you have reached the temperature you want, choose the first ventilation speed, then turn the thermostat knob counter-clockwise until the compressor goes off (you can tell this has happened when the noise diminishes).
- Now select the second ventilation speed again, and the system will preserve the temperature you have set.

5.6 Ventilation

If you want to move the air inside the vehicle without heating or cooling, proceed as follows:

- Press the Cold Air /Hot Air selector **[Fig. 15 ref. 3]** in the position 
- Position the Thermostat **[Fig. 15 ref. 2]** selector in the position
- Press the ON/OFF switch **[Fig. 15 ref. 4]** to position it ON
- Choose the ventilation speed required **[Fig. 15 ref. 1]**.

5.7 Heating

The electrical heater of the air conditioner cannot replace a conventional heating system, but it does help to warm up the air in the morning or on cool days.

Press the Cold Air /Hot Air selector in the position

Position the Thermostat **[Fig. 15 ref. 2]** selector in the position

Press the ON/OFF switch **[Fig. 15 ref. 4]** to position ON

Choose the ventilation speed required **[Fig. 15 ref. 1]**.

5.8 Turning off

To turn the air conditioner off, position the switch **[Fig. 15 ref. 4]** on the OFF position.

CAUTION ***After having turned the air conditioner off, either using the thermostat knob or the ON-OFF switch, wait at least three minutes before turning it back on again, so the coolant can stabilise its pressure. Lack of compliance with this rule may damage the compressor irreparably.***

5.9 Safety rules

- Always use earthed power sources protected by differential switches.
- Never use the air conditioner near flammable liquids.
- Never use the air conditioner for any purpose other than that designed for by the Manufacturer.
- Never modify or tamper with any part of the air conditioner.
- Use only original spare parts.
- Maintenance and repairs must be performed by specialised personnel only.
- Installation must only be performed by qualified personnel.
- Never allow animals or children near the equipment.
- Never put your hands inside the ventilation grids.
- Never put foreign objects into the ventilation outlets.
- Should the air conditioner be subject to an impact, have it checked by specialised personnel before using it again.
- In case of fire, never open the top lid of the air conditioner, but use a standard non water based fire extinguisher.
- Do not use water to put the fire out.

5.10 Some problems and how to solve them

Unsatisfactory performance of the air conditioner will usually be due to improper use rather than to malfunction check.
- The conditioner is not too small compared to the volume of air it has to condition.
- The walls of the vehicle are sufficiently insulated.
- The doors are not opened too frequently.
- There are not too many people inside the vehicle.
- The voltage is less than 230 V.

Here is a list of possible problems and how to solve them.

INFORMATION ***Before anything else, check if:***
the power supply has dropped below 205 V;
the ventilation grids are jammed;
the air diffusion outlets are open.

1) The air conditioner will not start up:
- *Check whether the ON/OFF switch is in its ON position **[Fig. 15 ref. 4]**, the thermostat is in its all-cold position **[Fig. 15 ref. 2]**, the fan speed selector switch is in position 1 **[Fig. 15 ref. 1]**.*
- *Make sure then that the power source is live by using a domestic appliance or a voltmeter.*

2) The compressor does not work:
- *For the compressor to work, the thermostat **[Fig. 15 ref. 2]** must be in its **cold** position, the hot/cold selector switch in cold position and at least the first fan speed on.*

3) The fans do not work:
- *Make sure that the ON/OFF switch **[Fig. 15 ref. 4]** is in its ON position and that the fan speed selector switch **[Fig. 15 ref. 1]** is set on value 1.*

4) The condenser fan does not work:
- *Make sure that the condenser fan is not hindered by foreign matter.*

5)The heating resistance does not work:
- *Make sure that the hot/cold selector switch is in hot position **[Fig. 15 ref. 3]**.*

6)The air conditioner performs poorly:
- *If the air conditioner performs poorly, you must clean the air filter, the condenser and the evaporator using specific detergents. We suggest you clean these before using the air conditioner when it has not been used for a long time. If the air conditioner still does not return to its original performance after cleaning of the exchangers, you must have the coolant gas level checked by a pecialist.*

6. MAINTENANCE

Accurate inside cleaning of the air conditioner is important to keep it efficient.

DANGER ***Before accessing the air conditioner, you must disconnect the 230V power supply and wait for all parts to cool off.***

- Take off the outside cover and spray the proper detergent on the heat exchangers (evaporator and condenser), and then rinse to remove all debris.

- Make sure that the drainage holes are free **[fig. 13 ref. 5]**.

- Make sure that the sealing lining is in good condition and that no water is leaking into the vehicle.

- Any traces of rust must be removed, and metal parts protected by repainting.

- Make sure that the insulation of the electric cables are whole and remove any trace of humidity.

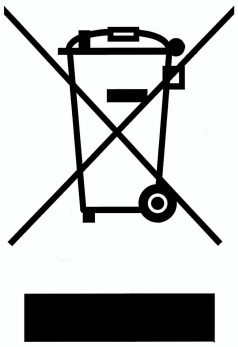
- Make sure that all the screws are firmly tightened.

- When putting away in the garage for the winter, you should protect the air conditioner from dust using a special cover **(accessory code 00639).**

7. DISPOSAL

If you have to dispose of the air conditioner, refer to a specialised workshop.

INFORMATION ***All the waste material must not be disposed of in the open, but in special containers and delivered to a Waste Collection and Disposal Centre.***



8. TROUBLESHOOTING (for technical staff only)

INFORMATION ***Before performing the checks listed below, make sure that the ON/OFF switch is in the ON position [Fig. 15 ref. 4], the thermostat is in the all-cold position [Fig. 15 ref. 2], and the fan speed selector switch is in position 1 [Fig. 15 ref. 1].***

1) PROBLEM The air conditioner does not start up

CHECK Make sure that the infeed terminal of the air conditioner between the blue and the yellow wire is powered at 230 VAC ***[Fig. 16 ref. 4]***.

OPERATION Check the differential switch, the fuse protection on the power supply line, the wholeness of the power supply line.

CHECK Make sure that there is 230 VAC power between the blue and the brown wire of the voltage transformer ***[Fig. 16 ref. 15]*.**

OPERATION Check the wholeness of the ON/OFF switch and its connections, and replace or reconnect if necessary ***[Fig. 15 ref. 1]*.**

CHECK Make sure that there is 12 VAC power between the pink and the yellow wire of the transformer ***[Fig.18 ref. 15].***

OPERATION If there is no voltage, replace the transformer.

CHECK Make sure that there is 12 VAC power between the pink and the violet wire of the transformer.

OPERATION If there is no voltage, replace the transformer.

CHECK Disconnect both blue wires from the DC feeder board, and check whether there is continuity between both ends ***[Fig. 16 ref. 14]***.

OPERATION If there is no continuity, replace the inductor ***[Fig. 16 ref. 13]***.

CHECK Make sure that there is 12 VDC between the red and the black wire of the DC feeder board ***[Fig. 16 ref. 14]*.**

OPERATION If there is no voltage, replace the feeder board.

CHECK Make sure that there is 12 VDC between the black wire of the relay ***[Fig. 16 ref. 2]*** and the red wire of the fan speed selector ***[Fig. 16 ref. 8]***.

OPERATION Check the harness and the multi-wire connector ***[Fig. 16 ref. 7]***.

CHECK Make sure that there is 12 VDC on the fan speed selector ***[Fig. 16 ref. 8]*** between the orange and the black wire of the relay.

OPERATION Replace fan speed selector.

CHECK Make sure there is 230 VAC between the white wire of the relay ***[Fig. 16 ref. 2]*** and the blue wire of the feeder input terminal ***[Fig. 16 ref. 4]***.

OPERATION Replace the relay.

CHECK Make sure that when the hot/cold selector switch ***[Fig. 16 ref. 3]*** is positioned on cold, there is 230 VAC between the pink and the blue wire of the infeed terminal ***[Fig. 16 ref. 4]***.

OPERATION Replace the hot/cold selector switch.

CHECK Make sure that when the hot/cold selector switch ***[Fig. 16 ref. 3]*** is positioned on hot, there is 230 VAC between the grey and the blue wire of the infeed terminal **[Fig. 16 ref. 4]**.

OPERATION Replace the hot/cold selector switch.

CHECK Make sure that there is 230 VAC between the violet wire of the thermostat ***[Fig. 16 ref. 5]*** and the blue wire of the infeed terminal ***[Fig. 16 ref. 4]*** (when the ambient temperature is below 16°C, the thermostat will not close its contacts, so this test must be performed at an ambient temperature over 20°C).

OPERATION Replace the thermostat

CHECK Make sure that when the hot/cold selector ***[Fig. 16 ref. 3]*** is in cold position, and after the plastic side cover has been removed, the following are on the compressor ***[Fig. 16 ref. 11]***: voltage at 230 VAC between the blue and the white wire; voltage at 230 VAC between the black and the white wire; voltage at about 250 VAC between the orange and the white wire.

OPERATION Check the connector and the harness. Replace the temperature switch on the compressor.Replace the condenser ***[Fig. 16 ref. 10]*.**

CHECK Make sure that there are 12 VDC between the green speed selector switch wire ***[Fig. 16 ref. 8]*** and the black relay selector wire ***[Fig. 16 ref. 2]*.**

OPERATION Check the harness and the multi-wire connector.

2) PROBLEM The compressor does not work

CHECK Make sure that there is 12 VDC between the black wire of the relay ***[Fig. 16 ref. 2]*** and the red wire of the fan speed selector ***[Fig. 16 ref. 8]***.

OPERATION Check the harness and the multi-wire connector ***[Fig. 16 ref. 7]***.

CHECK *Make sure that there is 12 VDC on the fan speed selector [Fig. 16 ref. 8] between the orange and the black wire of the relay.*

OPERATION Replace fan speed selector.

CHECK Make sure there is 230 VAC between the white wire of the relay ***[Fig. 16 ref. 2]*** and the blue wire of the feeder input terminal ***[Fig. 16 ref. 4]***.

OPERATION Replace the relay.

CHECK Make sure that when the hot/cold selector switch ***[Fig. 16 ref. 3]*** is positioned on cold, there is 230 VAC between the pink and the blue wire of the infeed terminal ***[Fig. 16 ref. 4]***.

OPERATION Replace the hot/cold selector switch.

CHECK Make sure that there is 230 VAC between the violet wire of the thermostat ***[Fig. 16 ref. 5]*** and the blue wire of the infeed terminal ***[Fig. 16 ref. 4]*** (when the ambient temperature is below 16(C, the thermostat will not close its contacts, so this test must be performed at an ambient temperature over 20(C).

OPERATION Replace the thermostat

CHECK Make sure that when the hot/cold selector ***[Fig. 16 ref. 3]*** is in cold position, and after the plastic side cover has been removed, the following are on the compressor ***[Fig. 16 ref. 11]***: voltage at 230 VAC between the blue and the white wire; voltage at 230 VAC between the black and the white wire; voltage at about 250 VAC between the orange and the white wire.

OPERATION Check the connector and the harness.
Replace the temperature switch on the compressor.
Replace the condenser ***[Fig. 16 ref. 10]***.

3) PROBLEM The fans do not work

CHECK Make sure that there is 12 VDC between the black wire of the relay ***[Fig. 16 ref. 2]*** and the red wire of the fan speed selector ***[Fig. 16 ref. 8]***.

OPERATION Check the harness and the multi-wire connector ***[Fig. 16 ref. 7]***.

CHECK Make sure that there are 12 VDC between the green speed selector switch wire [Fig. 16 ref. 8] and the black relay selector wire ***[Fig. 16 ref. 2]***.

OPERATION Replace the fan speed selector switch.

CHECK Make sure that there is 12 VDC between the black and the green wire of the evaporator ventilator ***[Fig. 16 ref. 9]***.

OPERATION Check the harness and the multi-wire connector.

CHECK With the hot/cold selector ***[Fig. 16 ref. 3]*** on cold position, make sure there are 12 VDC between both brown wires and the red wire of the ventilation speed selector ***[Fig. 16 ref. 8]***.

OPERATION Make sure that the contacts 2 and 3 of the hot/cold selector switch are closed, and replace them if necessary.

CHECK Make sure that there are 12 VDC between the black and the red wire of the condenser ***[Fig. 16 ref. 12]***.

OPERATION Check the harness and the multi-wire connector.

4) PROBLEM The fan of the condenser does not work

CHECK With the hot/cold selector ***[Fig. 16 ref. 3]*** on cold position, make sure there is 12 VDC between both brown wires and the red wire of the ventilation speed selector ***[Fig. 16 ref. 8]***.

OPERATION Make sure that the contacts 2 and 3 of the hot/cold selector switch are closed, and replace them if necessary.

CHECK Make sure that there is 12 VDC between the black and the red wire of the condenser ***[Fig. 16 ref. 12].***

OPERATION Check the harness and the multi-wire connector.

5) PROBLEM The fan of the evaporator does not work

CHECK Make sure that there is 12 VDC between the green ventilation speed selector switch wire ***[Fig. 16 ref. 8]*** and the black relay selector wire ***[Fig. 16 ref. 2]*.**

OPERATION Replace the fan speed selector switch.

CHECK Make sure that there is 12 VDC between the black and the green wire of the evaporator ventilator ***[Fig. 16 ref. 9].***

OPERATION Check the harness and the multi-wire connector.

6) PROBLEM The heating resistance does not work

CHECK Make sure that there is 12 VDC on the fan speed selector ***[Fig. 16 ref. 8]*** between the orange and the black wire of the relay.

OPERATION Replace fan speed selector.

CHECK Make sure there is 230 VAC between the white wire of the relay ***[Fig. 16 ref. 2]*** and the blue wire of the feeder input terminal ***[Fig. 16 ref. 4]***.

OPERATION Replace the relay.

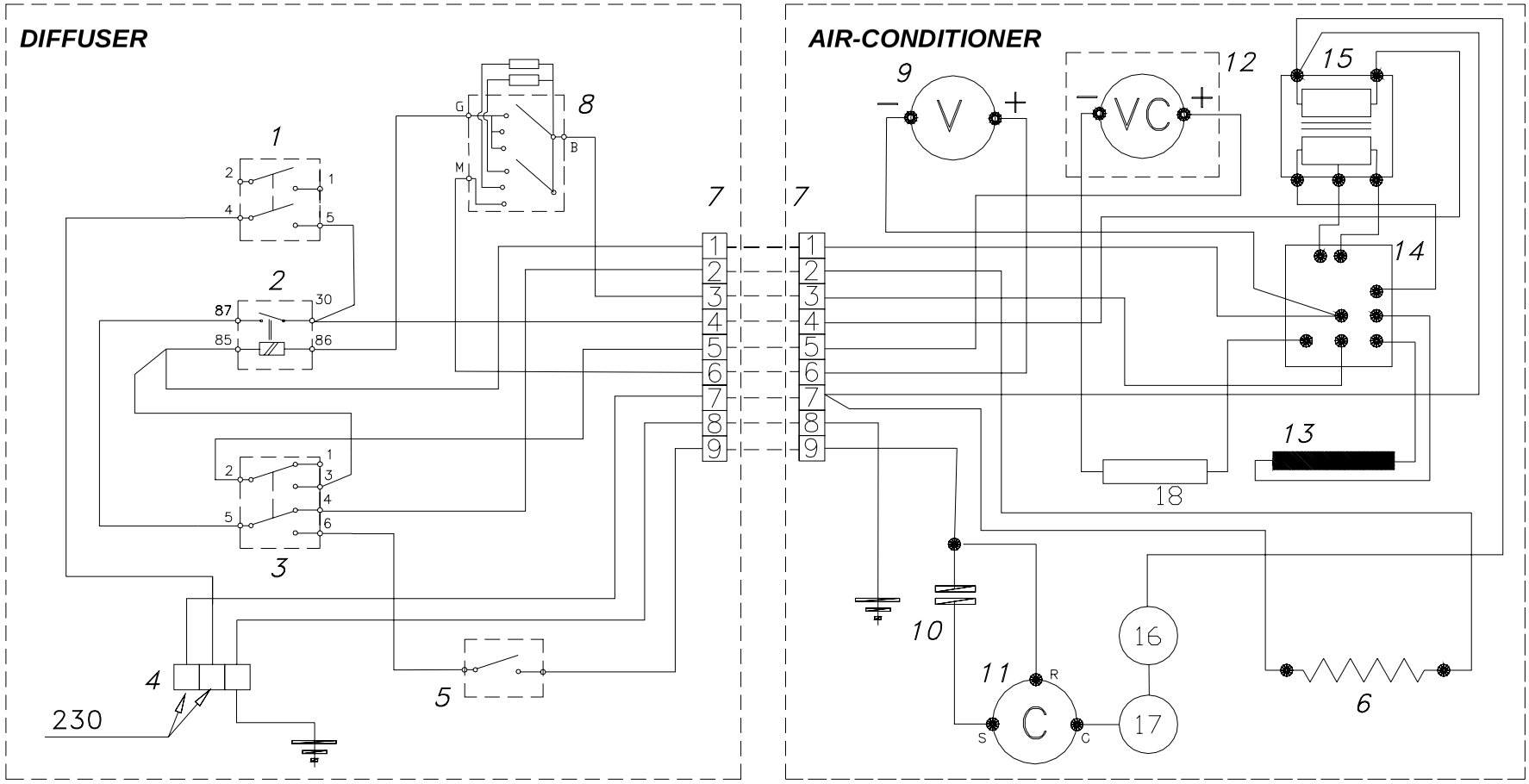
7) The air conditioner is performing poorly

CHECK Check the cleanliness of the air filter and exchangers.

OPERATION If the air conditioner is clean, then you must check the coolant gas tcover.
Proceed as follows: open the high pressure valve ***[Fig. 17 ref. 17]***, unscrewing the safety cap. Use a sharp instrument to press on the inside of the high pressure valve, thus allowing all the coolant gas to come out.
Connect the vacuum pump to the high pressure valve and let it run for at least one hour.
Quickly disconnect the vacuum pump and connect the refill station to the high pressure valve immediately, and put in 450 g of R407C gas.
When you have finished filling, close the high pressure valve with its safety cap.

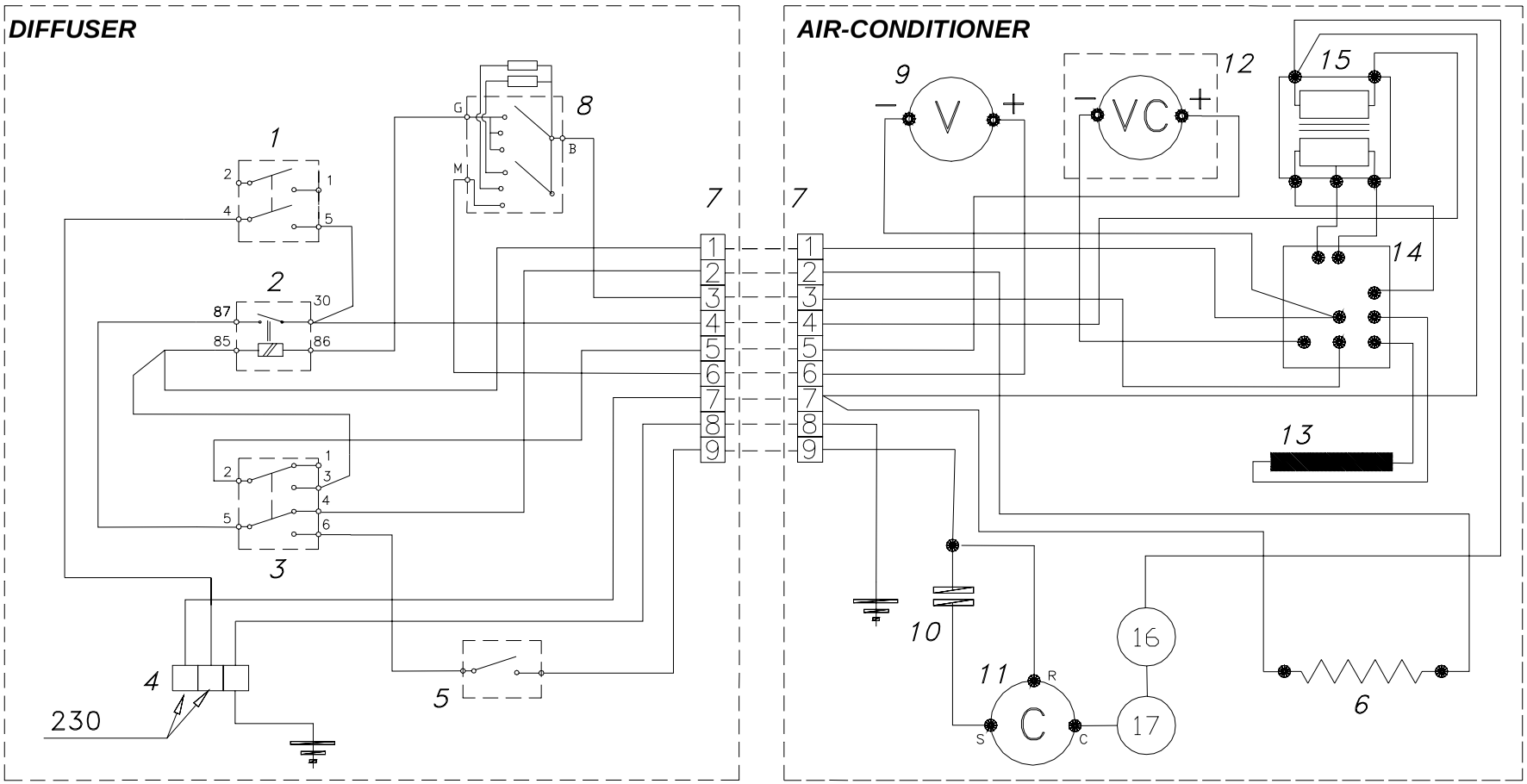
ICEBERG 7000 WIRING DIAGRAM

1	On/off switch
2	Relay
3	Cold/warm selector switch
4	Power supply connection terminal board
5	Thermostat
6	Resistor
7	Connector
8	Fan speed selector switch
9	Evaporator electric fan
10	Condenser
11	Compressor
12	Condenser electric fan
13	Inductor
14	12 VDC power supply
15	Transformer 230/12V
16	Max. pressure switch
17	Compressor thermal protetction
18	Armored resistor



ICEBERG 12000 WIRING DIAGRAM

1	On/off switch
2	Relay
3	Cold/warm selector switch
4	Power supply connection terminal board
5	Thermostat
6	Resistor
7	Connector
8	Fan speed selector switch
9	Evaporator electric fan
10	Condenser
11	Compressor
12	Condenser electric fan
13	Inductor
14	12 VDC power supply
15	Transformer 230/12V
16	Max. pressure switch
17	Compressor thermal protetction



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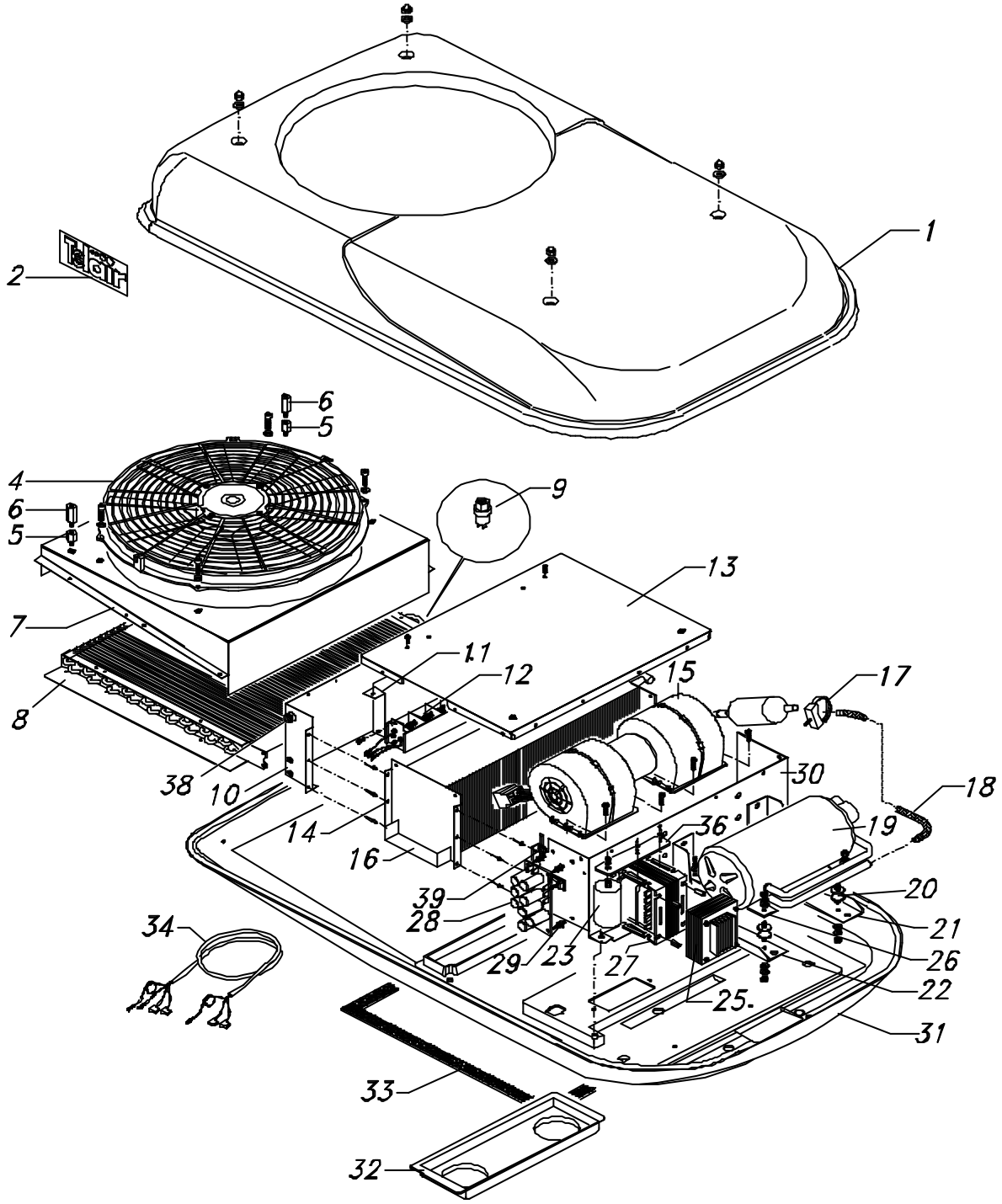
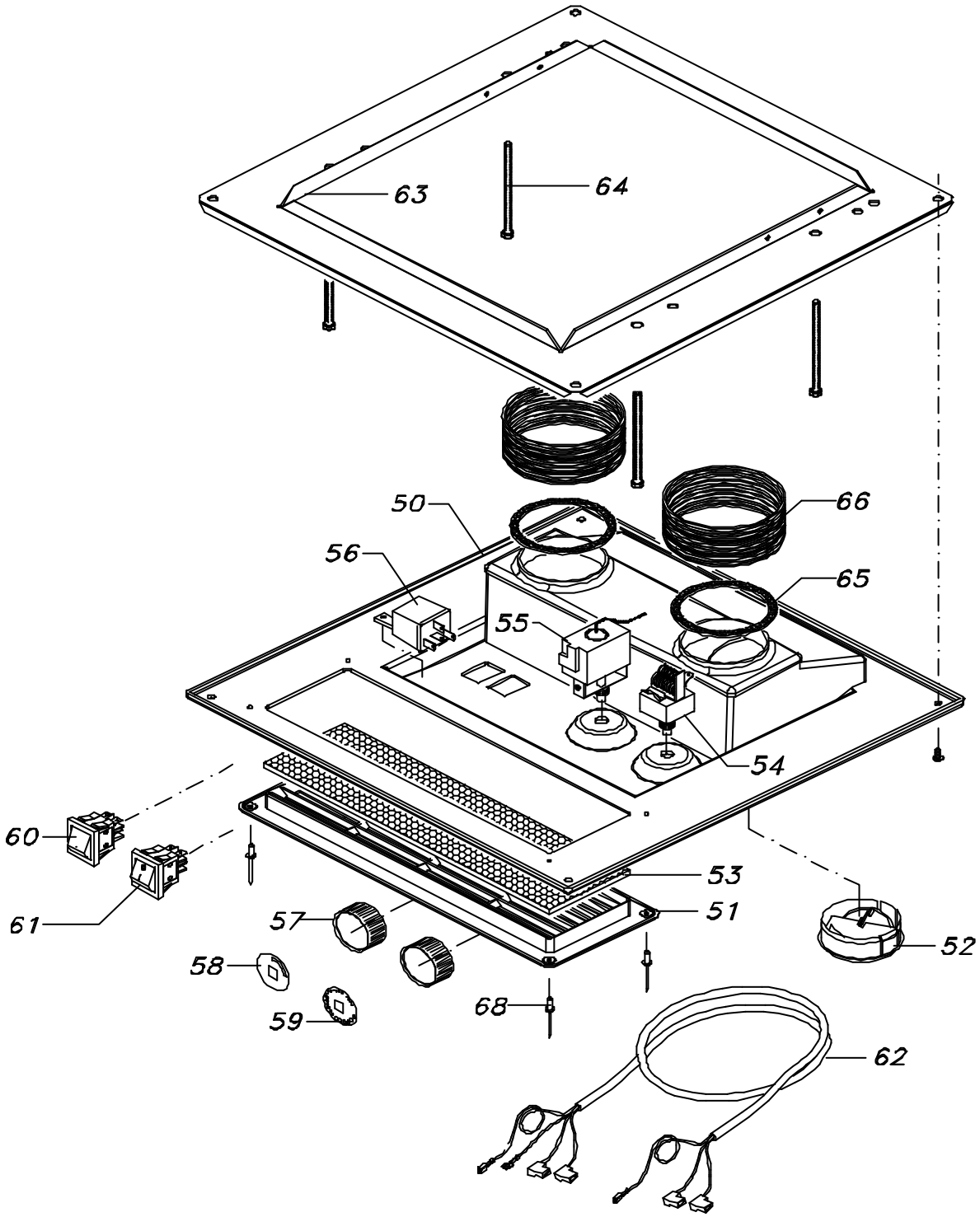


Pos.	Cod.	UM	Q.tà	Descrizione/Description	Denomination/Bezeichnung	Denomination/Descripcion
1	00348	N.	1	Fondo Bottom	Fond Boden	Onderkant Fondo
2	00368	N.	1	Etichetta Label	Etiquette Etikett	Etiket Etiqueta
4	00022	N.	1	Ventola Fan	Ventilateur Lufterrad	Ventilator Ventilador
5	00198	N.	2	Distanziatore Spacer	Entretoise Distanzstuck	Afstandshouder Separador
6	01458	N.	2	Distanziatore Spacer	Entretoise Distanzstück	Afstandshouder Separador
7	01423	N.	1	Plenum condensatore Cond.plenum	Plénum condens. Plenum Kondensator	Distributieruimte condensator Plenum condensador
8	00056	N.	1	Batteria Battery	Batterie Batterie	Accu Bateria
9	01381	N.	1	Pressostato Pressure switch	Pressostat Druckschalter	Drukverschilschakelaar Presòstato
10	01590	N.	1	Scatola posteriore evaporatore Rear evapor. box	Boîtier arr. évap. Hinterer Kasten des Verdampfers	Voorste kast Verdamper Caja delantera evaporador
11	01456	N.	1	Staffa di ancoraggio Anchor. braket	Bride de fixat. Befestigungsbügel	Verankeringsbeugel Estribo de ancleje
12	00322	N.	1	Resistenza Resistor	Résistance Widerstand	Weerstand Resistencia
13	01586	N.	1	Coperchio Lid	Couvercle Deckel	Kap Tapa
14	01331	N.	1	Evaporatore Evaporator	Evaporateur Verdampfer	Verdamper Evvaporador
15	00021	N.	1	Ventola Fan	Ventilateur Lufterrad	Ventilator Ventilador
16	01869	N.	1	Tegolo di scarico condensa Conds disch.sheet	Pièce métall. évacuation condensation Kondenswasserablass	Condensafvoerplaat Teja de descarga condensaciòn
17	01040	N.	1	Collare Collar	Collier Bundring	Ring Collar
18	00929	N.	1	Antivibrante Vibration damper	Amort. vibrations Schwingungsdämpfer	Trillingsdemper Antivibraciòn
19	01236	N.	1	Compressore rotativo Sliding-vane compressor	Compress. rotatif Kapselkompressor	Roterende compressor Compresor rotatorio
20	00945	N.	4	Antivibrante Vibration damper	Amort. vibrations Schwingungsdämpfer	Trillingsdemper Antivibraciòn
21	01588	N.	1	Staffa DX RH Bracket	Bride D. Bügel, re	Rechterbeugel Estribo DER
22	01587	N.	1	Staffa DX RH Bracket	Bride D. Bügel, re	Rechterbeugel Estribo DER
23	00424	N.	1	Condensatore 30MF Condenser 30MF	Condens. 30MF Kondensator 30MF	Condensator 30MF Condensador 30MF
25	00225	N.	1	Trasformatore Transformer	Transformateur Transformator	Transformator Transformador
26	01630	N.	2	Staffa compressore Compressor bracket	Bride compress. Kompressorbügel	Beugel compressor Estribo compresor
27	00226	N.	1	Induttanza Inductor	Inductance Drossel	Inductantie Inductantie
28	00061	N.	1	Circuito assemblato T0071 Assembled circuit T0071	Circuit assemblé T0071 Schaltungen T0071	Schakelingen T0071 Circuito ensamblado T0071

29	00306	N.	4	Supporto di plastica Plastic support	Support plastique Kunststoffhalterung	Plastic steun Soporte de plastico
30	01585	N.	1	Scatola anteriore evaporatore Front Evapor. box	Boîtier av.évapor. Vorderer Kasten des Verdampfers	Voorste kast verdamper Caja delantera evaporador
31	00348	N.	1	Fondo Bottom	Fond Boden	Onderkant Fondo
32	01580	N.	1	Convogliatore Conveyor	Convoyeur Leitblech	Geleider Transportador
33	00997	ML	1,9	Aerstop Rubber strip	Joint caoutchouc Aerstop	Aerstop Aerstop
34	01609	N.	1	Cablaggio Harness	Câblage Verkabelung	Bedrading Cableado
36	01631	N.	1	Staffa condensatore Cond. bracket	Bride condens. Kodensatorbügel	Beugel condensator Estribo condensador
38	01513	N.	1	Schiavi passacavo D.8 Fairleads D.8	Serre-câble D.8 Kabeltüllen, D.8	Kabelklem D.8 Passa cable D.8
39	01510	N.	1	Schiavi passacavo D.10 Fairleads D.10	Serre-câble D.10 Kabeltüllen, D.10	Kabelklem D.10 Passa cable D.10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Pos.	Cod.	UM	Q.tà	Descrizione/Description	Denomination/Bezeichnung	Denomination/Descripcion
50	01403	N.	1	Diffusore Diffuser	Diffuseur Luftverteiler	Stromingsspreider Difusor
51	01450	N.	1	Aeratore da incasso Built-in aerator	Aérateur à encastrer Einbaulüfter	Inbouwventilator Ventilador empotrado
52	00151	N.	5	Bocchetta Mouth	Bouche Düse	Mondstuk Boquilla
53	00134	N.	1	Filtro poliuretano rigido Stiff polyurethan filter	Filtre polyuréth. Rigide PUR-Filter steif	Onbuigzaam polyurethaan filter Filtro poliuretano rigido
54	00059	N.	1	Selettore 3 velocità 3-speed selector	Sélecteur 3 vitesses Wahlschalter 3 geschw.	Keuzeschakelaar 3 snelheden Selector 3 velocidades
55	00439	N.	1	Termostato Thermostat	Thermostat Thermostat	Thermostaat Termòstato
56	00513	N.	1	Rele' 12V 40 Amp. Relay 12V 40 Amp	Relais 12V 40A Relais 12V 40 Amp.	Relais 12V 40 Amp. Relé 12V 40 Amp.
57	05566	N.	2	Manopola diffusore Diffuser Knob	Poignée diffuseur Drehgriff Luftverteiler	Knop stromingsspreider Mango difusor
58	01160	N.	1	Etichetta Label	Etiquette Etikett	Etiket Etiqueta
59	01161	N.	1	Etichetta Label	Etiquette Etikett	Etiket Etiqueta
60	00301	N.	1	Deviatore Deflector	Déviateur Abzweiger	Omschakelaar Desviador
61	00302	N.	1	Interruttore Switch	Interrupteur Schalter	Schakelaar Interruptor
62	01618	ND	1	Cablaggio diffusore Diffuser harness	Câblage diffuseur Verkab.Luftverteiler	Bedrading stromingsspreider Cableado difusor
63	01589	N.	1	Lamiera diffusore Diffuser sheet	Pièce métallique diffuseur Luftverteilungsblech	Plaat stromingsspreider Chapa difusor
64	05522	N.	4	Vite UNI 5739 Screw UNI 5739	Vis UNI 5739 Schraube UNI 5739	Schroef UNI 5739 Tornillo UNI 5739
64	00373	N.	4	Vite UNI 5739 Screw UNI 5739	Vis UNI 5739 Schraube UNI 5739	Schroef UNI 5739 Tornillo UNI 5739
65	01568	N.	2	Guarnizione Gasket	Joint Dichtung	Afdichting Junta
66	01659	N.	0,1	Tubo aria calda Hot air pipe	Tuyau air chaud Warmluftleitung	Wormeluchtslang Tubo aire caliente
68	01552	N.	4	Rivetto autobloccante Self-locking rivet	Rivet auto-bloquant Niet selbstsichernd	Zelfborgendeklinknagel Remache de autobloqueo

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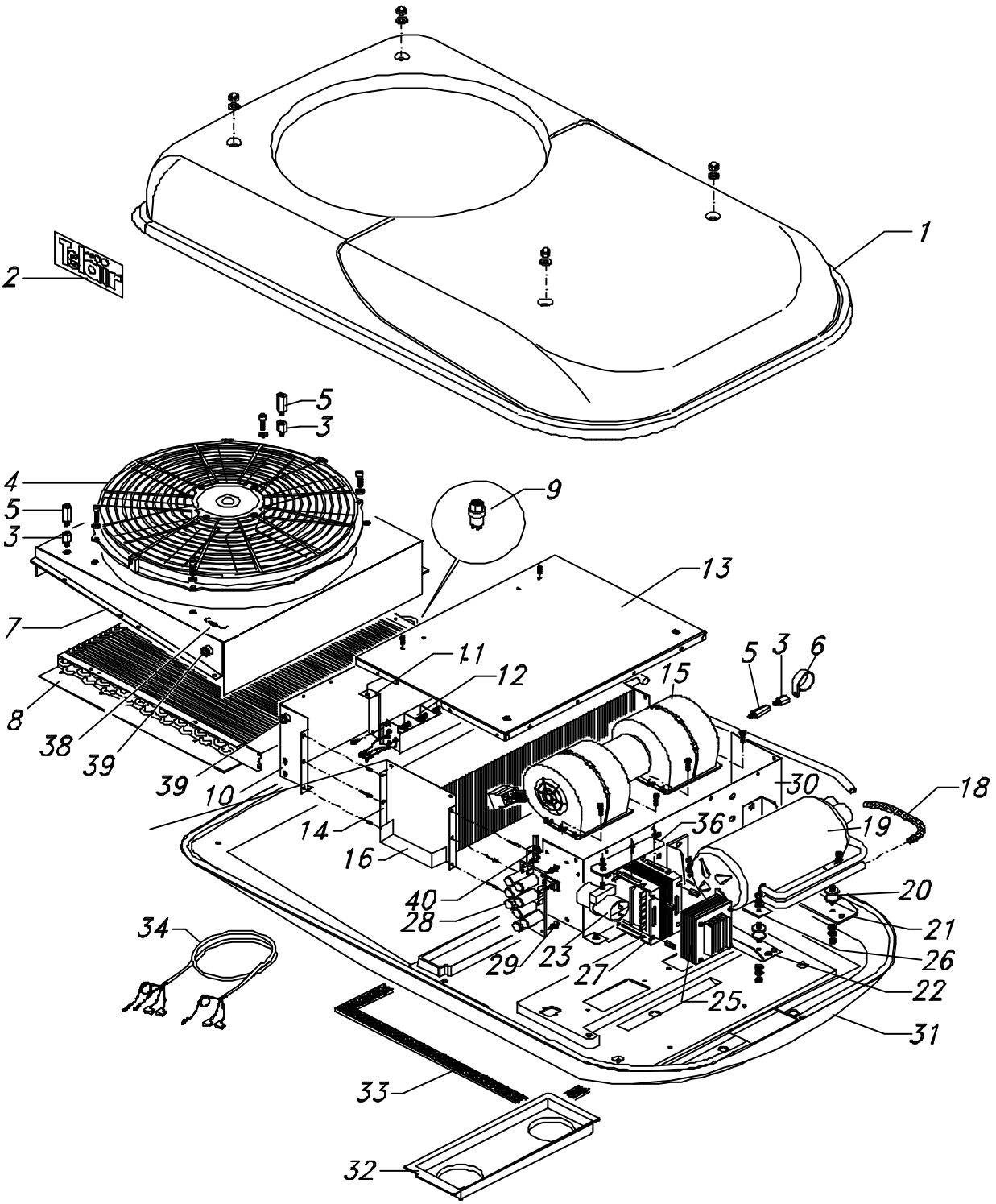
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Pos.	Cod.	UM	Q.tà	Descrizione/Description	Denomination/Bezeichnung	Denomination/Descripcion
1	00347	N.	1	Coperchio Lid	Couvercle Deckel	Kap Tapa
2	00368	N.	2	Etichetta Label	Etiquette Etikett	Etiket Etiqueta
3	00198	N.	3	Distanziatore Spacer	Entretoise Distanzstuck	Afstandshouder Separador
4	00022	N.	1	Ventola Fan	Ventilateur Lufterrad	Ventilator Ventilador
5	01458	N.	3	Distanziatore Spacer	Entretoise Distanzstück	Afstandshouder Separador
6	00919	N.	1	Fascetta Clamp	Collier Schelle	Bandje Bandje
7	01423	N.	1	Plenum condensatore Cond.plenum	Plénum condens. Plenum Kondensator	Distributieruimte condensator Plenum condensador
8	01384	N.	1	Condensatore Condenser	Condenseur Kondensator	Condensator Condensator
9	01381	N.	1	Pressostato Pressure switch	Pressostat Druckschalter	Drukverschilschakelaar Presòstato
10	01590	N.	1	Scatola posteriore evaporatore Rear evapor. box	Boîtier arr. évap. Hinterer Kasten des Verdampfers	Voorste kast Verdamper Caja delantera evaporador
11	01456	N.	2	Staffa di ancoraggio Anchor. braket	Bride de fixat. Befestigungsbügel	Verankeringsbeugel Estribo de ancleje
12	00322	N.	1	Resistenza Resistor	Résistance Widerstand	Weerstand Resistencia
13	01586	N.	1	Coperchio Lid	Couvercle Deckel	Kap Tapa
14	01385	N.	1	Evaporatore Evaporator	Evaporateur Verdampfer	Verdamper Evaporador
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16	01869	N.	1	Tegolo di scarico condensa Conds disch.sheet	Pièce métall. évacuation condensation Kondenswasserablass	Condensafvoerplaat Teja de descarga condensaciòn
18	00929	N.	1	Antivibrante Vibration damper	Amort. vibrations Schwingungsdämpfer	Trillingsdemper Antivibraciòn
19	01342	N.	1	Compressore rotativo Sliding-vane compressor	Compress.rotatif Kapselkompressor	Roterende compressor Roterende compressor
20	00945	N.	4	Antivibrante Vibration damper	Amort. vibrations Schwingungsdämpfer	Trillingsdemper Antivibraciòn
21	01587	N.	1	Staffa DX RH Bracket	Bride D. Bügel, re	Rechterbeugel Estribo DER
22	01588	N.	1	Staffa DX RH Bracket	Bride D. Bügel, re	Rechterbeugel Estribo DER
23	00424	N.	1	Condensatore 30MF Condenser 30MF	Condens. 30MF Kondensator 30MF	Condensator 30MF Condensador 30MF
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26	01630	N.	2	Staffa compressore Compressor bracket	Bride compress. Kompressorbügel	Beugel compressor Estribo compresor
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31	00348	N.	1	Fondo Bottom	Fond Boden	Onderkant Fondo
32	01580	N.	1	Convogliatore Conveyor	Convoyeur Leitblech	Geleider Transportador
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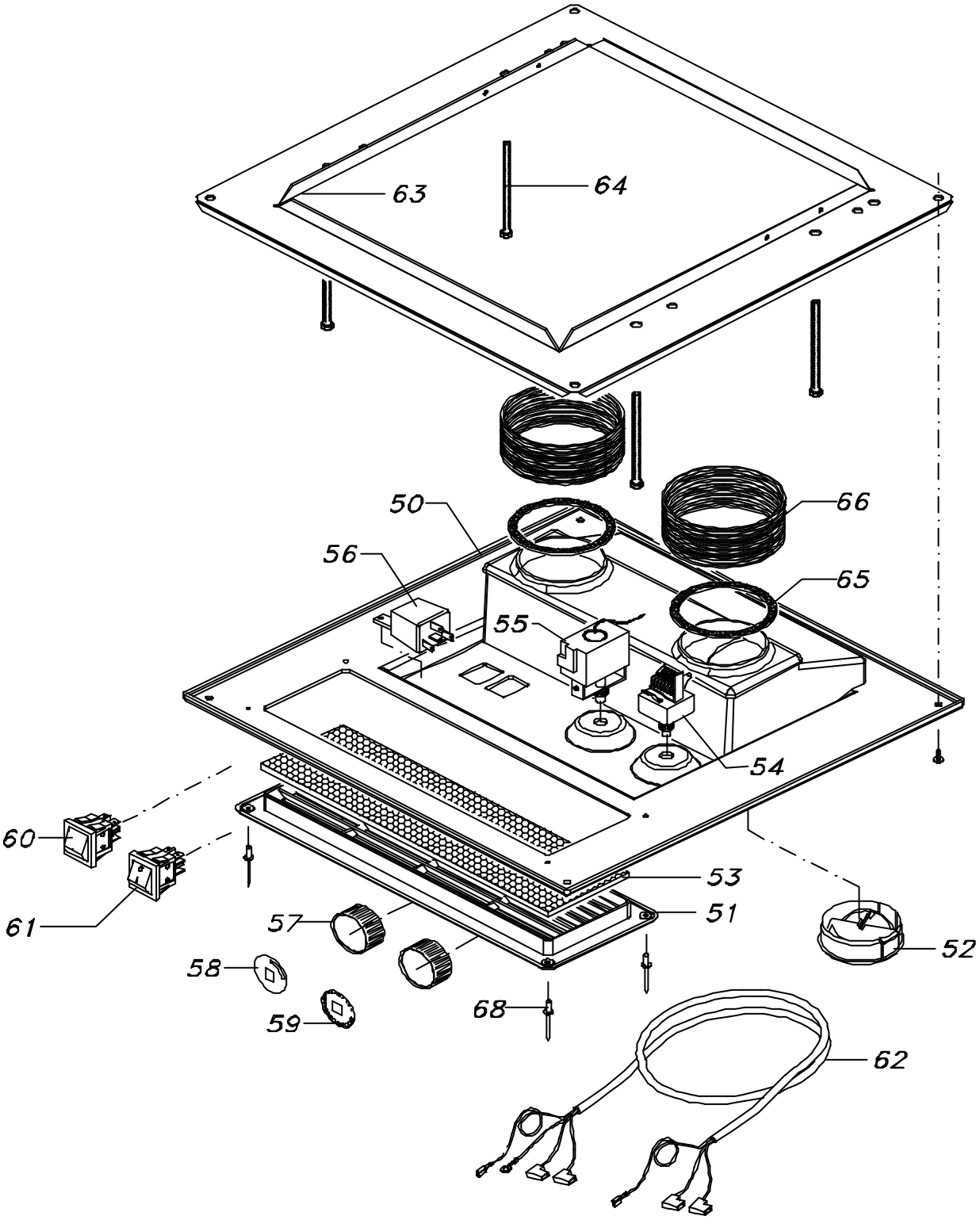
34	01609	N.	1	Cablaggio Harness	Câblage Verkabelung	Bedrading Cableado
36	01631	N.	1	Staffa condensatore Cond. bracket	Bride condens. Kodensatorbügel	Beugel condensator Estribo condensador
38	01629	N.	1	Resistenza 1 OHM 50W Resistor 1 OHM 50W	Résistance 1 Ohm 50W Widerstand 1 OHM 50W	Weerstand 1 OHM 50W Resistencia 1 OHM 50W
39	01513	N.	2	Schiavi passacavo D.8 Fairleads D.8	Serre-câble D.8 Kabeltüllen, D.8	Kabelklem D.8 Passa cable D.8
40	01510	N.	1	Schiavi passacavo D.10 Fairleads D.10	Serre-câble D.10 Kabeltüllen, D.10	Kabelklem D.10 Passa cable D.10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Pos.	Cod.	UM	Q.tà	Descrizione/Description	Denomination/Bezeichnung	Denomination/Descripcion
50	01404	N.	1	Diffusore Diffuser	Diffuseur Luftverteiler	stromingsspreider Difusor
51	01450	N.	1	Aeratore da incasso Built-in aerator	Aérateur à encastrer Einbaulüfter	Inbouwventilator Ventilador empotrado
52	00151	N.	3	Bocchetta Mouth	Bouche Düse	Mondstuk Boquilla
53	00134	N.	1	Filtro poliuretano rigido Stiff polyurethan filter	Filtre polyuréth. Rigide PUR-Filter steif	Onbuigzaam polyurethaan filter Filtro poliuretano rigido
54	00059	N.	1	Selettore 3 velocità 3-speed selector	Sélecteur 3 vitesses Wahlschalter 3 geschw.	Keuzeschakelaar 3 snelheden Selector 3 velocidades
55	00439	N.	1	Termostato Thermostat	Thermostat Thermostat	Thermostaat Termòstato
56	00513	N.	1	Rele' 12V 40 Amp. Relay 12V 40 Amp	Relais 12V 40A Relais 12V 40 Amp.	Relais 12V 40 Amp. Relé 12V 40 Amp.
57	05566	N.	2	Manopola diffusore Diffuser Knob	Poignée diffuseur Drehgriff Luftverteiler	Knop stromingsspreider Mango difusor
58	01160	N.	1	Etichetta Label	Etiquette Etikett	Etiket Etiqueta
59	01161	N.	1	Etichetta Label	Etiquette Etikett	Etiket Etiqueta
60	00301	N.	1	Deviatore Deflector	Déviateur Abzweiger	Omschakelaar Desviador
61	00302	N.	1	Interruttore Switch	Interrupteur Schalter	Schakelaar Interruptor
62	01618	ND	1	Cablaggio diffusore Diffuser harness	Câblage diffuseur Verkab.Luftverteiler	Bedrading stromingsspreider Cableado difusor
63	01589	N.	1	Lamiera diffusore Diffuser sheet	Pièce métallique diffuseur Luftverteilungsblech	Plaat stromingsspreider Chapa difusor
64	05522	N.	4	Vite UNI 5739 Screw UNI 5739	Vis UNI 5739 Schraube UNI 5739	Schroef UNI 5739 Tornillo UNI 5739
64	00373	N.	4	Vite UNI 5739 Screw UNI 5739	Vis UNI 5739 Schraube UNI 5739	Schroef UNI 5739 Tornillo UNI 5739
65	01568	N.	2	Guarnizione Gasket	Joint Dichtung	Afdichting Junta
66	01659	N.	0,1	Tubo aria calda Hot air pipe	Tuyau air chaud Warmluftleitung	Wormeluchtslang Tubo aire caliente
68	01552	N.	4	Rivetto autobloccante Self-locking rivet	Rivet auto-bloquant Niet selbstsichernd	Zelfborgendeklinknagel Remache de autobloqueo

GENERAL TERMS OF WARRANTY

Telair guarantees that its products are without faults or defects in their material and/or construction.

The effects of the warranty are understood to be limited to the right to obtain replacement or repair free of cost of any part which should turn out to be defective, within 12 months from the date of purchase of the product and in *Telair*'s opinion.

It is understood that the purchaser has no right whatsoever:
- to terminate the contract;
- to claim damages for people or things;
- to demand an extension of the warranty in case of any product defect or malfunction.

Any transport charges are on the account of the purchaser, as well as any expenses for on-site checks requested by the purchaser and accepted by *Telair*.

The warranty shall be valid only if the customer is able to show a document evidencing the date of purchase (invoice or receipt).
This document must be kept whole and must be submitted to the *Telair* after-sales centre when asking for operation under warranty.

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